

IN THE CLAIMS

Claim 1. (Currently Amended) An automatic transmission system for a vehicle,
comprising:

an automatic transmission including a torque converter provided with a lockup clutch;
and

a controller that controls, while the vehicle is coasting in a fuel-cut state, an oil pressure
of the lockup clutch through a feedback control using a hydraulic device so that a slip rotation
speed of the lockup clutch matches a target slip rotation speed, wherein

the controller includes a calculation portion that calculates the slip rotation speed of the
lockup clutch, and

a control portion configured to control ~~that controls~~ the hydraulic device so that the oil
pressure of the lockup clutch becomes constant if the slip rotation speed calculated by the
calculation portion is greater than a predetermined rotation speed during a downshift of the
automatic transmission, and controls the hydraulic device so that the slip rotation speed
matches the predetermined slip rotation speed if the slip rotation speed calculated by the
calculation portion is less than the predetermined slip rotation speed during the downshift of
the automatic transmission.

Claim 2. (Cancelled).

Claim 3. (Currently Amended) An automatic transmission system for a vehicle,
comprising:

an automatic transmission including a torque converter provided with a lockup clutch;
and

a controller configured to control ~~that controls~~, while the vehicle is coasting in a fuel-cut state, an oil pressure of the lockup clutch through a feedback control using a hydraulic device so that a slip rotation speed of the lockup clutch matches a target slip rotation speed, wherein

the controller includes a calculation portion that calculates the slip rotation speed of the lockup clutch, and

a setting portion that sets the slip rotation speed calculated by the calculation portion as the target slip rotation speed if the slip rotation speed calculated by the calculation portion is greater than a predetermined rotation speed during a downshift of the automatic transmission and sets the predetermined rotation speed as the target slip rotation speed if the slip rotation speed calculated by the calculation portion is less than the predetermined rotation speed during the downshift of the automatic transmission.

Claims 4-5. (Cancelled).

Claim 6. (Previously Presented) The automatic transmission system according to claim 3, wherein the controller further includes a converging portion that, after the target slip rotation speed has been set by the setting portion, converges the target slip rotation speed to a target slip rotation speed of a steady coasting run if a predetermined converging condition is met.

Claim 7. (Currently Amended) A control apparatus for an automatic transmission for a vehicle including a torque converter provided with a lockup clutch, the control apparatus being able to control, while the vehicle is coasting in a fuel-cut state, an oil pressure of the lockup clutch through a feedback control using a hydraulic device so that a slip rotation speed of the lockup clutch matches a target slip rotation speed, the control apparatus comprising:

calculation means configured to calculate ~~for calculating~~ the slip rotation speed of the lockup clutch; and

control means configured to control ~~for controlling~~ the hydraulic device so that the oil pressure of the lockup clutch becomes constant if the slip rotation speed calculated is greater than a predetermined rotation speed during a downshift.

Claim 8. (Currently Amended) A control apparatus for an automatic transmission for a vehicle including a torque converter provided with a lockup clutch, the control apparatus being able to control, while the vehicle is coasting in a fuel-cut state, an oil pressure of the lockup clutch through a feedback control using a hydraulic device so that a slip rotation speed of the lockup clutch matches a target slip rotation speed, and execute an oil pressure fixing control of fixing the oil pressure if a downshift of the automatic transmission is executed, the control apparatus comprising:

calculation means configured to calculate ~~for calculating~~ the slip rotation speed of the lockup clutch; and:

stop means configured to stop ~~for stopping~~ the oil pressure fixing control if the slip rotation speed calculated is less than a predetermined rotation speed while the oil pressure fixing control is being executed.

Claim 9. (Previously Presented) A control apparatus for an automatic transmission for a vehicle including a torque converter provided with a lockup clutch, the control apparatus being able to control, while the vehicle is coasting in a fuel-cut state, an oil pressure of the lockup clutch through a feedback control using a hydraulic device so that a slip rotation speed of the lockup clutch matches a target slip rotation speed, the control apparatus comprising:

calculation means for calculating the slip rotation speed of the lockup clutch; and

first rotation speed setting means for setting the calculated slip rotation speed as the target slip rotation speed if the slip rotation speed calculated by the calculation means is greater than a predetermined rotation speed during a downshift of the automatic transmission and for setting the predetermined rotation speed as the target slip rotation speed if the slip rotation speed calculated by the calculation means is less than the predetermined rotation speed during the downshift of the automatic transmission.

Claims 10-15. (Cancelled).

Claim 16. (Previously Presented) The automatic transmission system according to claim 1, wherein the control portion includes a setting portion that sets the slip rotation speed calculated by the calculation portion as the target slip rotation speed if the slip rotation speed calculated by the calculation portion is greater than a predetermined rotation speed during the downshift of the automatic transmission.

Claim 17. (Currently Amended) An automatic transmission system for a vehicle, comprising:

an automatic transmission including a torque converter provided with a lockup clutch;
and

a controller that controls, while the vehicle is coasting in a fuel-cut state, an oil pressure of the lockup clutch through a feedback control using a hydraulic device so that a slip rotation speed of the lockup clutch matches a target slip rotation speed, wherein

the controller includes calculation means for calculating the slip rotation speed of the lockup clutch, and

control means configured to control ~~for controlling~~ the hydraulic device so that the oil pressure of the lockup clutch becomes constant if the slip rotation speed calculated by the calculation means is greater than a predetermined rotation speed during a downshift of the automatic transmission, and for controlling the hydraulic device so that the slip rotation speed matches the predetermined slip rotation speed if the slip rotation speed calculated by the calculation means is less than the predetermined slip rotation speed during the downshift of the automatic transmission.

Claim 18. (Currently Amended) An automatic transmission system for a vehicle, comprising:

an automatic transmission including a torque converter provided with a lockup clutch;
and

a controller configured to control ~~that controls~~, while the vehicle is coasting in a fuel-cut state, an oil pressure of the lockup clutch through a feedback control using a hydraulic device so that a slip rotation speed of the lockup clutch matches a target slip rotation speed, wherein

the controller includes calculation means for calculating the slip rotation speed of the lockup clutch, and

rotation speed setting means for setting the calculated slip rotation speed as the target slip rotation speed if the slip rotation speed calculated by the calculation means is greater than a predetermined rotation speed during a downshift of the automatic transmission and for setting the predetermined rotation speed as the target slip rotation speed if the slip rotation speed calculated by the calculation means is less than the predetermined rotation speed during the downshift of the automatic transmission.

Claim 19. (Previously Presented) The automatic transmission system according to claim 18, wherein the controller further includes converging means that, after the target slip rotation speed has been set by the setting means, converges the target slip rotation speed to a target slip rotation speed of a steady coasting run if a predetermined converging condition is met.

Claim 20. (Previously Presented) The automatic transmission system according to claim 17, wherein the control means includes setting means that sets the slip rotation speed calculated by the calculation portion as the target slip rotation speed if the slip rotation speed calculated by the calculation means is greater than a predetermined rotation speed during the downshift of the automatic transmission.

Claim 21 (Previously Presented) The automatic transmission system according to claim 16, wherein the control portion sets the predetermined rotation speed as the target slip rotation speed if the calculated slip rotation speed is less than the predetermined rotation speed during the downshift of the automatic transmission.

Claim 22 (Previously Presented) The automatic transmission system according to claim 16, wherein

the control portion further includes a converging portion that, after the target slip rotation speed has been set by the setting means, converges the target slip rotation speed to a target slip rotation speed of a steady coasting run if a predetermined converging condition is met.